



#10

## SEQUENCE LISTING

&lt;110&gt; Zonana et al.

&lt;120&gt; Hypohydrotic ectodermal dysplasia genes and proteins

&lt;130&gt; 55924

&lt;140&gt; 09/729,658

&lt;141&gt; 2000-12-04

&lt;150&gt; 09/342,681

&lt;151&gt; 1999-06-29

&lt;150&gt; 60/092,279

&lt;151&gt; 1998-07-09

&lt;150&gt; 60/112,366

&lt;151&gt; 1998-12-15

&lt;160&gt; 127

&lt;170&gt; PatentIn Ver. 2.1

&lt;210&gt; 1

&lt;211&gt; 1574

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

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&lt;221&gt; CDS

&lt;222&gt; (242)..(1417)

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gac cct gac agc ccc atc acc agt cac ctt ggg cag ccg tca cct aag Asp Pro Asp Ser Pro Ile Thr Ser His Leu Gly Gln Pro Ser Pro Lys 100 105 110			577
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Ser Gln Val Glu Val Tyr Tyr Ile Asn Phe Thr Asp Phe Ala Ser Tyr			
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Ile Ser Ile Asn Met Ser Lys His Thr Thr Phe Phe Gly Ala Ile Arg			
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Val His Leu Gln Gly	Gln Gly Ser Ala Ile	Gln Val Lys Asn Asp Leu	
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tca ggt gga gtg ctc	aat gac tgg tct cgc	atc act atg aac cct aag	987
Ser Gly Gly Val Leu	Asn Asp Trp Ser Arg	Ile Thr Met Asn Pro Lys	
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65 70 75 80  
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Gln Gln Pro Leu Glu Pro Gly Glu Asp Pro Leu Pro Pro Glu Ser Gln  
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210 215 220  
Pro Gln Gly Pro Pro Gly Leu Gln Gly Pro Ser Gly Ala Ala Asp Lys  
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Gly Ser Ala Ile Gln Val Lys Asn Asp Leu Ser Gly Gly Val Leu Asn  
260 265 270  
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305 310 315 320  
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tgctcgctt ctccgtagac ccattctctg ctgggaaaag ctaacctcat tcgggtacca 240
ggtgtacttc caagagatc atg gcc cac gtc ggg gac tgc aaa tgg atg tcc 292
                Met Ala His Val Gly Asp Cys Lys Trp Met Ser
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Trp Leu Pro Val Leu Val Val Ser Leu Met Cys Ser Ala Lys Ala Glu
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Cys Gln Gln Cys Pro Pro Cys Arg Pro Gly Glu Glu Pro Tyr Met Ser
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Cys Gly Tyr Gly Thr Lys Asp Asp Asp Tyr Gly Cys Val Pro Cys Pro
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Glu Asn Asp Ala Glu Cys Gly Pro Cys Leu Pro Gly Tyr Tyr Met Leu
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gaa aac aga ccc agg aac atc tat ggc atg gtc tgc tac tcc tgt ctc 676
Glu Asn Arg Pro Arg Asn Ile Tyr Gly Met Val Cys Tyr Ser Cys Leu
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ctg att att gcc atg tct acg atc ttc atc atg gcc att gcc atc gtc Leu Ile Ile Ala Met Ser Thr Ile Phe Ile Met Ala Ile Ala Ile Val 190 195 200	868
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aat ggt gag ttc cag aag ctg aca gca aca ccc aca aag acc ccc aaa Asn Gly Glu Phe Gln Lys Leu Thr Ala Thr Pro Thr Lys Thr Pro Lys 255 260 265	1060
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agt aac aag tct gct ggg atc cag agc cgg agg aaa aag ata ctg gat Ser Asn Lys Ser Ala Gly Ile Gln Ser Arg Arg Lys Lys Ile Leu Asp 320 325 330	1252
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Gln Leu Phe Asp Arg Ile Ser Thr Ala Gly Tyr Ser Ile Pro Glu Leu	
400 405 410	
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Leu Thr Lys Leu Val Gln Ile Glu Arg Leu Asp Ala Val Glu Ser Leu	
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Cys Ala Asp Ile Leu Glu Trp Ala Gly Val Val Pro Pro Ala Ser Pro	
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Pro Pro Ala Ala Ser	
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 Val Val Ser Leu Met Cys Ser Ala Lys Ala Glu Asp Ser Asn Cys Gly

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aaa gga ggt tat cag ata tgc agg cgc cac aaa gac tgt gag ggc ttc Lys Gly Gly Tyr Gln Ile Cys Arg Arg His Lys Asp Cys Glu Gly Phe 85 90 95			288
ttc cgg gcc act gtg ctg aca cca gga gac atg gaa aac gac gct gag Phe Arg Ala Thr Val Leu Thr Pro Gly Asp Met Glu Asn Asp Ala Glu 100 105 110			336
tgt ggc cca tgt ctc cct ggc tac tac atg ctg gaa aac aga ccc agg Cys Gly Pro Cys Leu Pro Gly Tyr Tyr Met Leu Glu Asn Arg Pro Arg 115 120 125			384
aac atc tat ggc atg gtc tgc tac tcc tgt ctc ttg gca cct ccc aac Asn Ile Tyr Gly Met Val Cys Tyr Ser Cys Leu Leu Ala Pro Pro Asn 130 135 140			432
acc aag gaa tgt gtg gga gcc act tct ggg gtt tca gca cac tca tcc Thr Lys Glu Cys Val Gly Ala Thr Ser Gly Val Ser Ala His Ser Ser 145 150 155 160			480
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gag ctc tca ggc caa gga cac ctg gcc acc gcc ctg att att gcc atg Glu Leu Ser Gly Gln Gly His Leu Ala Thr Ala Leu Ile Ile Ala Met 180 185 190			576
tct acg atc ttc atc atg gcc att gcc atc gtc ctc atc atc atg ttc Ser Thr Ile Phe Ile Met Ala Ile Ala Ile Val Leu Ile Ile Met Phe 195 200 205			624
tac atc atg aag act aag ccg tca gct cca gcc tgc tgt agc agt ccc Tyr Ile Met Lys Thr Lys Pro Ser Ala Pro Ala Cys Cys Ser Ser Pro 210 215 220			672
cca gga aag agc gca gaa gcc cca gct aac aca cac gag gag aaa aaa Pro Gly Lys Ser Ala Glu Ala Pro Ala Asn Thr His Glu Glu Lys Lys 225 230 235 240			720
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245	250	255	
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tcc tct gag aac gag cag ttg cta agt cgc agt gtg gac agt gat gaa Ser Ser Glu Asn Glu Gln Leu Leu Ser Arg Ser Val Asp Ser Asp Glu 275 280 285			864
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cta gtt cac ctg gcc agg gag aag tct gtg acc agt aac aag tct gct Leu Val His Leu Ala Arg Glu Lys Ser Val Thr Ser Asn Lys Ser Ala 305 310 315 320			960
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gcg gtc gtg aaa aca tgg cgc cac ctt gcc gag agc ttt gga ctg aag Ala Val Val Lys Thr Trp Arg His Leu Ala Glu Ser Phe Gly Leu Lys 370 375 380			1152
agg gat gag att ggg ggc atg act gat ggc atg cag ctc ttt gac cgc Arg Asp Glu Ile Gly Gly Met Thr Asp Gly Met Gln Leu Phe Asp Arg 385 390 395 400			1200
atc agc acc gcg ggc tac agc atc cca gag ctg ctc aca aag ttg gtg Ile Ser Thr Ala Gly Tyr Ser Ile Pro Glu Leu Leu Thr Lys Leu Val 405 410 415			1248
cag atc gag cgg ctg gat gct gtg gag tcc ttg tgt gca gac ata ttg Gln Ile Glu Arg Leu Asp Ala Val Glu Ser Leu Cys Ala Asp Ile Leu 420 425 430			1296
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Arg Ala Gly Glu Gly Asn Ser Cys Leu Leu Phe Leu Gly Phe Phe Gly	
35 40 45	
ctc tcg ctg gcc ctc cac ctg ctg acg ttg tgc tgc tac cta gag ttg	192
Leu Ser Leu Ala Leu His Leu Leu Thr Leu Cys Cys Tyr Leu Glu Leu	
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Arg Ser Glu Leu Arg Arg Glu Arg Gly Ala Glu Ser Arg Leu Gly Gly	
65 70 75 80	
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Ser Gly Thr Pro Gly Thr Ser Gly Thr Leu Ser Ser Leu Gly Gly Leu	
85 90 95	
gac cct gac agc ccc atc acc agt cac ctt ggg cag ccg tca cct aag	336
Asp Pro Asp Ser Pro Ile Thr Ser His Leu Gly Gln Pro Ser Pro Lys	
100 105 110	
cag cag cca ttg gaa ccg gga gaa gcc gca ctc cac tct gac tcc cag	384
Gln Gln Pro Leu Glu Pro Gly Glu Ala Ala Leu His Ser Asp Ser Gln	
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Asp Gly His Gln Met Ala Leu Leu Asn Phe Phe Phe Pro Asp Glu Lys	
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Pro Tyr Ser Glu Glu Glu Ser Arg Arg Val Arg Arg Asn Lys Arg Ser	
145 150 155 160	
aaa agc aat gaa gga gca gat ggc cca gtt aaa aac aag aaa aag gga	528
Lys Ser Asn Glu Gly Ala Asp Gly Pro Val Lys Asn Lys Lys Lys Gly	
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Lys Lys Ala Gly Pro Pro Gly Pro Asn Gly Pro Pro Gly Pro Pro Gly	
180 185 190	

cct cca gga ccc cag gga ccc cca gga att cca ggg att cct gga att Pro Pro Gly Pro Gln Gly Pro Pro Gly Ile Pro Gly Ile Pro Gly Ile 195 200 205	624
cca gga aca act gtt atg gga cca cct ggt cct cca ggt cct cct ggt Pro Gly Thr Thr Val Met Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly 210 215 220	672
cct caa gga ccc cct ggc ctc cag gga cct tct ggt gct gct gat aaa Pro Gln Gly Pro Pro Gly Leu Gln Gly Pro Ser Gly Ala Ala Asp Lys 225 230 235 240	720
gct gga act cga gaa aac cag cca gct gtg gtg cat cta cag ggc caa Ala Gly Thr Arg Glu Asn Gln Pro Ala Val Val His Leu Gln Gly Gln 245 250 255	768
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agt cag gta gaa gta tac tac atc aac ttc act gac ttt gcc agc tat Ser Gln Val Glu Val Tyr Tyr Ile Asn Phe Thr Asp Phe Ala Ser Tyr 305 310 315 320	960
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ctc ctc aag gcc cgg cag aag atc gcc gtc aag atg gtg cac gct gac Leu Leu Lys Ala Arg Gln Lys Ile Ala Val Lys Met Val His Ala Asp 355 360 365	1104
atc tcc atc aac atg agc aag cac acc acg ttc ttt ggg gcc atc agg Ile Ser Ile Asn Met Ser Lys His Thr Thr Phe Phe Gly Ala Ile Arg 370 375 380	1152
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Pro Arg Glu Arg Gly Ser Gln Gly Cys Gly Cys Arg Gly Ala Pro Ala	
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cgg gcg ggc gaa ggg aac agc tgc cgg ctc ttc ctg ggt ttc ttt ggc	144
Arg Ala Gly Glu Gly Asn Ser Cys Arg Leu Phe Leu Gly Phe Phe Gly	
35 40 45	
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Leu Ser Leu Ala Leu His Leu Leu Thr Leu Cys Cys Tyr Leu Glu Leu	
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Pro Gly Ala Pro Gly Thr Ser Gly Thr Leu Ser Ser Pro Gly Ser Leu	
85 90 95	
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Asp Pro Val Gly Pro Ile Thr Arg His Leu Gly Gln Pro Ser Phe Gln	
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Gln Gln Pro Leu Glu Pro Gly Glu Asp Pro Leu Pro Pro Glu Ser Gln	
115 120 125	
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Asp Arg His Gln Met Ala Leu Leu Asn Phe Phe Phe Pro Asp Glu Lys	
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145 150 155 160	
aaa agt ggt gaa gga gca gat ggt cct gtt aaa aac aag aaa aag gga	528
Lys Ser Gly Glu Gly Ala Asp Gly Pro Val Lys Asn Lys Lys Lys Gly	
165 170 175	
aag aag gca ggg cca cct ggg ccc aac ggc ccc cca gga cct cca gga	576
Lys Lys Ala Gly Pro Pro Gly Pro Asn Gly Pro Pro Gly Pro Pro Gly	
180 185 190	
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Pro Pro Gly Pro Gln Gly Pro Pro Gly Ile Pro Gly Ile Pro Gly Ile	
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Pro Gly Thr Thr Val Met Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly	
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	220
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Pro Gln Gly Pro Pro Gly Leu Gln Gly Pro Ser Gly Ala Ala Asp Lys	
225	230
	235
	240
act gga act cgg gaa aat cag cca gct gtg gtg cat ctg cag ggc caa	768
Thr Gly Thr Arg Glu Asn Gln Pro Ala Val Val His Leu Gln Gly Gln	
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	255
ggg tca gca att caa gtc aaa aat gat ctt tca ggt gga gtg ctc aat	816
Gly Ser Ala Ile Gln Val Lys Asn Asp Leu Ser Gly Gly Val Leu Asn	
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	270
gac tgg tct cgc atc act atg aac cct aag gtg ttt aaa cta cat ccc	864
Asp Trp Ser Arg Ile Thr Met Asn Pro Lys Val Phe Lys Leu His Pro	
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agc att gag aca ggg aag acc aac tac aac act tgc tat act gca ggc	1008
Ser Ile Glu Thr Gly Lys Thr Asn Tyr Asn Thr Cys Tyr Thr Ala Gly	
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	330
	335
gtg tgc ctc ctc aag gcc agg cag aaa atc gcc gtg aag atg gtg cac	1056
Val Cys Leu Leu Lys Ala Arg Gln Lys Ile Ala Val Lys Met Val His	
	340
	345
	350
gct gac atc tct atc aat atg agc aag cac acc acc ttc ttc ggg gcc	1104
Ala Asp Ile Ser Ile Asn Met Ser Lys His Thr Thr Phe Phe Gly Ala	
	355
	360
	365
atc agg ctg ggc gaa gcc cct gca tcc tag	
Ile Arg Leu Gly Glu Ala Pro Ala Ser	1134
	370
	375

<210> 16  
 <211> 1347  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1) .. (1347)

<400> 16

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Met Ala His Val Gly Asp Cys Thr Gln Thr Pro Trp Leu Pro Val Leu	
1 5 10 15	
gtg gtg tct ctg atg tgc tca gcc cga gcg gaa tac tca aac tgc ggt	96
Val Val Ser Leu Met Cys Ser Ala Arg Ala Glu Tyr Ser Asn Cys Gly	
20 25 30	
gag aac gag tac tac aac cag act acg ggg ctg tgc cag gag tgc ccc	144
Glu Asn Glu Tyr Tyr Asn Gln Thr Thr Gly Leu Cys Gln Glu Cys Pro	
35 40 45	
ccg tgt ggg ccg gga gag gag ccc tac ctg tcc tgt ggc tac ggc acc	192
Pro Cys Gly Pro Gly Glu Glu Pro Tyr Leu Ser Cys Gly Tyr Gly Thr	
50 55 60	
aaa gac gag gac tac ggc tgc gtc ccc tgc ccg gcg gag aag ttt tcc	240
Lys Asp Glu Asp Tyr Gly Cys Val Pro Cys Pro Ala Glu Lys Phe Ser	
65 70 75 80	
aaa gga ggc tac cag ata tgc agg cgt cac aaa gac tgt gag ggc ttc	288
Lys Gly Gly Tyr Gln Ile Cys Arg Arg His Lys Asp Cys Glu Gly Phe	
85 90 95	
ttc cgg gcc acc gtg ctg aca cca ggg gac atg gag aat gac gct gag	336
Phe Arg Ala Thr Val Leu Thr Pro Gly Asp Met Glu Asn Asp Ala Glu	
100 105 110	
tgt ggc cct tgc ctc cct ggc tac tac atg ctg gag aac aga ccg agg	384
Cys Gly Pro Cys Leu Pro Gly Tyr Tyr Met Leu Glu Asn Arg Pro Arg	
115 120 125	
aac atc tat ggc atg gtc tgc tac tcc tgc ctc ctg gca ccc ccc aac	432
Asn Ile Tyr Gly Met Val Cys Tyr Ser Cys Leu Leu Ala Pro Pro Asn	
130 135 140	
acc aag gaa tgt gtg gga gcc act tca gga gct tct gcc aac ttc cct	480
Thr Lys Glu Cys Val Gly Ala Thr Ser Gly Ala Ser Ala Asn Phe Pro	
145 150 155 160	
ggc acc tcg ggc agc agc acc ctg tct ccc ttc cag cac gcc cac aaa	528
Gly Thr Ser Gly Ser Ser Thr Leu Ser Pro Phe Gln His Ala His Lys	
165 170 175	
gaa ctc tca ggc caa gga cac ctg gcc act gcc ctg atc att gca atg	576
Glu Leu Ser Gly Gln Gly His Leu Ala Thr Ala Leu Ile Ile Ala Met	
180 185 190	
tcc acc atc ttc atc atg gcc atc gcc atc gtc ctc atc atc atg ttc	624
Ser Thr Ile Phe Ile Met Ala Ile Ala Ile Val Leu Ile Ile Met Phe	
195 200 205	
tac atc ctg aag aca aag ccc tct gcc cca gcc tgt tgc acc agc cac	672
Tyr Ile Leu Lys Thr Lys Pro Ser Ala Pro Ala Cys Cys Thr Ser His	

210	215	220	
ccg ggg aag agc gtg gag gcc caa gtg agc aag gac gag gag aag aaa			720
Pro Gly Lys Ser Val Glu Ala Gln Val Ser Lys Asp Glu Glu Lys Lys			
225	230	235	240
gag gcc cca gac aac gtg gtg atg ttc tcc gag aag gat gaa ttt gag			768
Glu Ala Pro Asp Asn Val Val Met Phe Ser Glu Lys Asp Glu Phe Glu			
	245	250	255
aag ctg aca gca act cca gca aag ccc acc aag agc gag aac gat gcc			816
Lys Leu Thr Ala Thr Pro Ala Lys Pro Thr Lys Ser Glu Asn Asp Ala			
	260	265	270
tca tcc gag aat gag cag ctg ctg agc cgg agc gtc gac agt gat gag			864
Ser Ser Glu Asn Glu Gln Leu Leu Ser Arg Ser Val Asp Ser Asp Glu			
	275	280	285
gag ccc gcc cct gac aag cag ggc tcc ccg gag ctg tgc ctg ctg tcg			912
Glu Pro Ala Pro Asp Lys Gln Gly Ser Pro Glu Leu Cys Leu Leu Ser			
	290	295	300
ctg gtt cac ctg gcc agg gag aag tct gcc acc agc aac aag tca gcc			960
Leu Val His Leu Ala Arg Glu Lys Ser Ala Thr Ser Asn Lys Ser Ala			
	305	310	315
ggg att caa agc cgg agg aaa aag atc ctc gat gtg tat gcc aac gtg			1008
Gly Ile Gln Ser Arg Arg Lys Lys Ile Leu Asp Val Tyr Ala Asn Val			
	325	330	335
tgt gga gtc gtg gaa ggt ctt agc ccc acg gag ctg cca ttt gat tgc			1056
Cys Gly Val Val Glu Gly Leu Ser Pro Thr Glu Leu Pro Phe Asp Cys			
	340	345	350
ctc gag aag act agc cga atg ctc agc tcc acg tac aac tct gag aag			1104
Leu Glu Lys Thr Ser Arg Met Leu Ser Ser Thr Tyr Asn Ser Glu Lys			
	355	360	365
gct gtt gtg aaa acg tgg cgc cac ctc gcc gag agc ttc ggc ctg aag			1152
Ala Val Val Lys Thr Trp Arg His Leu Ala Glu Ser Phe Gly Leu Lys			
	370	375	380
agg gat gag att ggg ggc atg aca gac ggc atg caa ctc ttt gac cgc			1200
Arg Asp Glu Ile Gly Gly Met Thr Asp Gly Met Gln Leu Phe Asp Arg			
	385	390	395
atc agc acg gca ggc tac agc atc cct gag cta ctc aca aaa ctg gtg			1248
Ile Ser Thr Ala Gly Tyr Ser Ile Pro Glu Leu Leu Thr Lys Leu Val			
	405	410	415
cag att gag cgg ctg gat gct gtg gag tcc ttg tgt gca gac ata ctg			1296
Gln Ile Glu Arg Leu Asp Ala Val Glu Ser Leu Cys Ala Asp Ile Leu			
	420	425	430
gag tgg gcg ggg gtt gtg cca cct gcc tcc cag cca cat gct gca tcc			1344
Glu Trp Ala Gly Val Val Pro Pro Ala Ser Gln Pro His Ala Ala Ser			

tga

1347

&lt;210&gt; 17

&lt;211&gt; 448

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 17

Met Ala His Val Gly Asp Cys Thr Gln Thr Pro Trp Leu Pro Val Leu  
 1 5 10 15  
 Val Val Ser Leu Met Cys Ser Ala Arg Ala Glu Tyr Ser Asn Cys Gly  
 20 25 30  
 Glu Asn Glu Tyr Tyr Asn Gln Thr Thr Gly Leu Cys Gln Glu Cys Pro  
 35 40 45  
 Pro Cys Gly Pro Gly Glu Glu Pro Tyr Leu Ser Cys Gly Tyr Gly Thr  
 50 55 60  
 Lys Asp Glu Asp Tyr Gly Cys Val Pro Cys Pro Ala Glu Lys Phe Ser  
 65 70 75 80  
 Lys Gly Gly Tyr Gln Ile Cys Arg Arg His Lys Asp Cys Glu Gly Phe  
 85 90 95  
 Phe Arg Ala Thr Val Leu Thr Pro Gly Asp Met Glu Asn Asp Ala Glu  
 100 105 110  
 Cys Gly Pro Cys Leu Pro Gly Tyr Tyr Met Leu Glu Asn Arg Pro Arg  
 115 120 125  
 Asn Ile Tyr Gly Met Val Cys Tyr Ser Cys Leu Leu Ala Pro Pro Asn  
 130 135 140  
 Thr Lys Glu Cys Val Gly Ala Thr Ser Gly Ala Ser Ala Asn Phe Pro  
 145 150 155 160  
 Gly Thr Ser Gly Ser Ser Thr Leu Ser Pro Phe Gln His Ala His Lys  
 165 170 175  
 Glu Leu Ser Gly Gln Gly His Leu Ala Thr Ala Leu Ile Ile Ala Met  
 180 185 190  
 Ser Thr Ile Phe Ile Met Ala Ile Ala Ile Val Leu Ile Ile Met Phe  
 195 200 205  
 Tyr Ile Leu Lys Thr Lys Pro Ser Ala Pro Ala Cys Cys Thr Ser His  
 210 215 220  
 Pro Gly Lys Ser Val Glu Ala Gln Val Ser Lys Asp Glu Glu Lys Lys  
 225 230 235 240  
 Glu Ala Pro Asp Asn Val Val Met Phe Ser Glu Lys Asp Glu Phe Glu  
 245 250 255  
 Lys Leu Thr Ala Thr Pro Ala Lys Pro Thr Lys Ser Glu Asn Asp Ala  
 260 265 270  
 Ser Ser Glu Asn Glu Gln Leu Leu Ser Arg Ser Val Asp Ser Asp Glu  
 275 280 285  
 Glu Pro Ala Pro Asp Lys Gln Gly Ser Pro Glu Leu Cys Leu Leu Ser  
 290 295 300  
 Leu Val His Leu Ala Arg Glu Lys Ser Ala Thr Ser Asn Lys Ser Ala  
 305 310 315 320  
 Gly Ile Gln Ser Arg Arg Lys Lys Ile Leu Asp Val Tyr Ala Asn Val  
 325 330 335  
 Cys Gly Val Val Glu Gly Leu Ser Pro Thr Glu Leu Pro Phe Asp Cys  
 340 345 350

Leu Glu Lys Thr Ser Arg Met Leu Ser Ser Thr Tyr Asn Ser Glu Lys  
 355 360 365  
 Ala Val Val Lys Thr Trp Arg His Leu Ala Glu Ser Phe Gly Leu Lys  
 370 375 380  
 Arg Asp Glu Ile Gly Gly Met Thr Asp Gly Met Gln Leu Phe Asp Arg  
 385 390 395 400  
 Ile Ser Thr Ala Gly Tyr Ser Ile Pro Glu Leu Leu Thr Lys Leu Val  
 405 410 415  
 Gln Ile Glu Arg Leu Asp Ala Val Glu Ser Leu Cys Ala Asp Ile Leu  
 420 425 430  
 Glu Trp Ala Gly Val Val Pro Pro Ala Ser Gln Pro His Ala Ala Ser  
 435 440 445

<210> 18  
 <211> 4235  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (433) .. (1779)

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 cccgctccag cctctccagt gctgggagag acctctagat ggtgcagggtg agtttgcaat 120  
 gagggaaagc ccctcggaag ggactgagtt tccaaacttg cagacagggc agggagcgggt 180  
 caaggaagag ttcccgggaa gccctttaa cggaaaggaa gcggggctag tgtcagagag 240  
 gtgtgccagg tcccaggcag ccctgctgac ccctaaggac atagagtacc tgcttctgag 300  
 agggctgcca cggtggccac ctgtgaagcc tgtcaccag aactggatgg tacctgactt 360  
 tcttcataga cccatcttct gctgggactg aagctgacct ccaacagaag ccaggtgagc 420  
 ccttgggaga gg atg gcc cat gtg ggg gac tgc acg cag acg ccc tgg ctc 471  
 Met Ala His Val Gly Asp Cys Thr Gln Thr Pro Trp Leu  
 1 5 10

ccc gtc ctg gtg gtg tct ctg atg tgc tca gcc cga gcg gaa tac tca 519  
 Pro Val Leu Val Val Ser Leu Met Cys Ser Ala Arg Ala Glu Tyr Ser  
 15 20 25

aac tgc ggt gag aac gag tac tac aac cag act acg ggg ctg tgc cag 567  
 Asn Cys Gly Glu Asn Glu Tyr Tyr Asn Gln Thr Thr Gly Leu Cys Gln  
 30 35 40 45

gag tgc ccc ccg tgt ggg ccg gga gag gag ccc tac ctg tcc tgt ggc 615  
 Glu Cys Pro Pro Cys Gly Pro Gly Glu Glu Pro Tyr Leu Ser Cys Gly  
 50 55 60

tac ggc acc aaa gac gag gac tac ggc tgc gtc ccc tgc ccg gcg gag 663  
 24



Tyr Gly Thr Lys Asp Glu Asp Tyr Gly Cys Val Pro Cys Pro Ala Glu  
 65 70 75  
 aag ttt tcc aaa gga ggc tac cag ata tgc agg cgt cac aaa gac tgt 711  
 Lys Phe Ser Lys Gly Gly Tyr Gln Ile Cys Arg Arg His Lys Asp Cys  
 80 85 90  
 gag ggc ttc ttc cgg gcc acc gtg ctg aca cca ggg gac atg gag aat 759  
 Glu Gly Phe Phe Arg Ala Thr Val Leu Thr Pro Gly Asp Met Glu Asn  
 95 100 105  
 gac gct gag tgt ggc cct tgc ctc cct ggc tac tac atg ctg gag aac 807  
 Asp Ala Glu Cys Gly Pro Cys Leu Pro Gly Tyr Tyr Met Leu Glu Asn  
 110 115 120 125  
 aga ccg agg aac atc tat ggc atg gtc tgc tac tcc tgc ctc ctg gca 855  
 Arg Pro Arg Asn Ile Tyr Gly Met Val Cys Tyr Ser Cys Leu Leu Ala  
 130 135 140  
 ccc ccc aac acc aag gaa tgt gtg gga gcc act tca gga gct tct gcc 903  
 Pro Pro Asn Thr Lys Glu Cys Val Gly Ala Thr Ser Gly Ala Ser Ala  
 145 150 155  
 aac ttc cct ggc acc tcg ggc agc agc acc ctg tct ccc ttc cag cac 951  
 Asn Phe Pro Gly Thr Ser Gly Ser Ser Thr Leu Ser Pro Phe Gln His  
 160 165 170  
 gcc cac aaa gaa ctc tca ggc caa gga cac ctg gcc act gcc ctg atc 999  
 Ala His Lys Glu Leu Ser Gly Gln Gly His Leu Ala Thr Ala Leu Ile  
 175 180 185  
 att gca atg tcc acc atc ttc atc atg gcc atc gcc atc gtc ctc atc 1047  
 Ile Ala Met Ser Thr Ile Phe Ile Met Ala Ile Ala Ile Val Leu Ile  
 190 195 200 205  
 atc atg ttc tac atc ctg aag aca aag ccc tct gcc cca gcc tgt tgc 1095  
 Ile Met Phe Tyr Ile Leu Lys Thr Lys Pro Ser Ala Pro Ala Cys Cys  
 210 215 220  
 acc agc cac ccg ggg aag agc gtg gag gcc caa gtg agc aag gac gag 1143  
 Thr Ser His Pro Gly Lys Ser Val Glu Ala Gln Val Ser Lys Asp Glu  
 225 230 235  
 gag aag aaa gag gcc cca gac aac gtg gtg atg ttc tcc gag aag gat 1191  
 Glu Lys Lys Glu Ala Pro Asp Asn Val Val Met Phe Ser Glu Lys Asp  
 240 245 250  
 gaa ttt gag aag ctg aca gca act cca gca aag ccc acc aag agc gag 1239  
 Glu Phe Glu Lys Leu Thr Ala Thr Pro Ala Lys Pro Thr Lys Ser Glu  
 255 260 265  
 aac gat gcc tca tcc gag aat gag cag ctg ctg agc cgg agc gtc gac 1287  
 Asn Asp Ala Ser Ser Glu Asn Glu Gln Leu Leu Ser Arg Ser Val Asp  
 270 275 280 285  
 agt gat gag gag ccc gcc cct gac aag cag ggc tcc ccg gag ctg tgc 1335  
 25

Ser Asp Glu Glu Pro Ala Pro Asp Lys Gln Gly Ser Pro Glu Leu Cys  
 290 295 300  
 ctg ctg tcg ctg gtt cac ctg gcc agg gag aag tct gcc acc agc aac 1383  
 Leu Leu Ser Leu Val His Leu Ala Arg Glu Lys Ser Ala Thr Ser Asn  
 305 310 315  
 aag tca gcc ggg att caa agc cgg agg aaa aag atc ctc gat gtg tat 1431  
 Lys Ser Ala Gly Ile Gln Ser Arg Arg Lys Lys Ile Leu Asp Val Tyr  
 320 325 330  
 gcc aac gtg tgt gga gtc gtg gaa ggt ctt agc ccc acg gag ctg cca 1479  
 Ala Asn Val Cys Gly Val Val Glu Gly Leu Ser Pro Thr Glu Leu Pro  
 335 340 345  
 ttt gat tgc ctc gag aag act agc cga atg ctc agc tcc acg tac aac 1527  
 Phe Asp Cys Leu Glu Lys Thr Ser Arg Met Leu Ser Ser Thr Tyr Asn  
 350 355 360 365  
 tct gag aag gct gtt gtg aaa acg tgg cgc cac ctc gcc gag agc ttc 1575  
 Ser Glu Lys Ala Val Val Lys Thr Trp Arg His Leu Ala Glu Ser Phe  
 370 375 380  
 ggc ctg aag agg gat gag att ggg ggc atg aca gac ggc atg caa ctc 1623  
 Gly Leu Lys Arg Asp Glu Ile Gly Gly Met Thr Asp Gly Met Gln Leu  
 385 390 395  
 ttt gac cgc atc agc acg gca ggc tac agc atc cct gag cta ctc aca 1671  
 Phe Asp Arg Ile Ser Thr Ala Gly Tyr Ser Ile Pro Glu Leu Leu Thr  
 400 405 410  
 aaa ctg gtg cag att gag cgg ctg gat gct gtg gag tcc ttg tgt gca 1719  
 Lys Leu Val Gln Ile Glu Arg Leu Asp Ala Val Glu Ser Leu Cys Ala  
 415 420 425  
 gac ata ctg gag tgg gcg ggg gtt gtg cca cct gcc tcc cag cca cat 1767  
 Asp Ile Leu Glu Trp Ala Gly Val Val Pro Pro Ala Ser Gln Pro His  
 430 435 440 445  
 gct gca tcc tga aaagcatgcc tgtgggctgt cctcccagga caagccaagg 1819  
 Ala Ala Ser  
 atccaacgag ggctctggag ctgtgagtgg tgccaaaaga ctgccaagaa tcaaggcttt 1879  
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 tccaatttaa ccaaagataa aggactagag cggggatact ttcagatgct cgctgtacc 1999  
 tcaccaggca gagtaaata ctactcactc atacagccag cccaccagcc caccattaac 2059  
 tcaactgaaca atgagacaat gttgaggact caaatgaatc aaaccccggtg ggaatgacag 2119  
 aagtgaagaa tctgggtccct gtctttaagg agtttgcact ccagtagaag acagaaggaa 2179  
 cgtatgttta caaaccactt cactggaaga cgtcaaaca gctgaatgaa ggggcgctta 2239

gaaaacgtta atagaagttc taagcgggag atgactccct actgggatga tgaaggatgg 2299  
 catcctagtg aagaagcagc tcaaacattht tgataaaatg gcaacaaaat gcagacaccc 2359  
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 atgtgtgcag tagccaattht catttactgc attactcttht ggcttgggaa cctgtgtgtc 2599  
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 acatgtatga gtagtcagct gtaattagag aaatgatgac ttcctaagag ttcagccacg 2779  
 cataattcta gatttcaaga gcatctaaga cttgtggatt agcctcatgg catgagagtt 2839  
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 caggtagggt tcaggtgagc aaaaagaaag tggagctata ggaaatgcca ggcctttgag 3079  
 gtgctctatg gaagtcaaca cagtgtggtt tgtccattta aatgggaata aaaacagaaa 3139  
 aactcagact tggcattttc acaataactg caatggtttg acataacatt tataggcaga 3199  
 aagttaataa actggcattg ttcttggcat attattgtac tatccctgta actgccaaga 3259  
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 ggcaggctctg tgtttattac tacattaaaa caaagtctct gacttataaa gcgaggctcg 3379  
 aaaaattaca agttgcatga ctgaaaaaat gctttagggg gaaaatcagt catatcttta 3439  
 acaccaaaa gcaatttccc accaacgaat gtagtacata ctgtgagagg atcataatga 3499  
 ggtcctgaat atttaatatc atcatttact gtgtctgttt gctgctgttt ttcgaacct 3559  
 tttggtttac cctgcaagct aaatactcca cggcagagct taattatcct tttattcct 3619  
 ctttgaaatc ctgtgggtgcc ccttcccc tgcttgtga tgatgatgag tgagtctccc 3679  
 cttaattaga ctgcaaatgt cacttgtgat gagtgtgcca ttccaggata acagcttgca 3739  
 cctcctcag aatgttttca gcgaaagagt ggggtggctg ttctctgctc ctgggtgctt 3799  
 ggcctcattt cacactatta gaattctggg gctgtaaggc cagccagtgt cagctcatgt 3859  
 tccattggct ctccacctgc catttttagg gagctattcc ttatatagtt acaattccc 3919

ttgtcattta cttatttgga aacatgggat ttactctgac aagctttagc ctatgttatg 3979  
 ggattcagaa caatgagatc ataataattc tcaactgacca aagctgggac tccatcctgc 4039  
 cttttttgtg tggagatatt cataattctg caatacttta aaacatttag aaaacacccc 4099  
 agggtaggtc tgtggccctt agacagtga gttttaattg tcaatattat ttttgtctaa 4159  
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 aaaaaaaaaa aaaaaa 4235

<210> 19  
 <211> 448  
 <212> PRT  
 <213> Homo sapiens

<400> 19  
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 1 5 10 15  
 Val Val Ser Leu Met Cys Ser Ala Arg Ala Glu Tyr Ser Asn Cys Gly  
 20 25 30  
 Glu Asn Glu Tyr Tyr Asn Gln Thr Thr Gly Leu Cys Gln Glu Cys Pro  
 35 40 45  
 Pro Cys Gly Pro Gly Glu Glu Pro Tyr Leu Ser Cys Gly Tyr Gly Thr  
 50 55 60  
 Lys Asp Glu Asp Tyr Gly Cys Val Pro Cys Pro Ala Glu Lys Phe Ser  
 65 70 75 80  
 Lys Gly Gly Tyr Gln Ile Cys Arg Arg His Lys Asp Cys Glu Gly Phe  
 85 90 95  
 Phe Arg Ala Thr Val Leu Thr Pro Gly Asp Met Glu Asn Asp Ala Glu  
 100 105 110  
 Cys Gly Pro Cys Leu Pro Gly Tyr Tyr Met Leu Glu Asn Arg Pro Arg  
 115 120 125  
 Asn Ile Tyr Gly Met Val Cys Tyr Ser Cys Leu Leu Ala Pro Pro Asn  
 130 135 140  
 Thr Lys Glu Cys Val Gly Ala Thr Ser Gly Ala Ser Ala Asn Phe Pro  
 145 150 155 160  
 Gly Thr Ser Gly Ser Ser Thr Leu Ser Pro Phe Gln His Ala His Lys  
 165 170 175  
 Glu Leu Ser Gly Gln Gly His Leu Ala Thr Ala Leu Ile Ile Ala Met  
 180 185 190  
 Ser Thr Ile Phe Ile Met Ala Ile Ala Ile Val Leu Ile Ile Met Phe  
 195 200 205  
 Tyr Ile Leu Lys Thr Lys Pro Ser Ala Pro Ala Cys Cys Thr Ser His  
 210 215 220  
 Pro Gly Lys Ser Val Glu Ala Gln Val Ser Lys Asp Glu Glu Lys Lys  
 225 230 235 240  
 Glu Ala Pro Asp Asn Val Val Met Phe Ser Glu Lys Asp Glu Phe Glu  
 245 250 255  
 Lys Leu Thr Ala Thr Pro Ala Lys Pro Thr Lys Ser Glu Asn Asp Ala  
 260 265 270  
 Ser Ser Glu Asn Glu Gln Leu Leu Ser Arg Ser Val Asp Ser Asp Glu  
 275 280 285  
 Glu Pro Ala Pro Asp Lys Gln Gly Ser Pro Glu Leu Cys Leu Leu Ser

290		295		300
Leu Val His Leu Ala Arg	Glu Lys Ser Ala Thr Ser Asn Lys Ser Ala			
305		310		320
Gly Ile Gln Ser Arg Arg	Lys Lys Ile Leu Asp Val Tyr Ala Asn Val			
		325		335
Cys Gly Val Val Glu Gly	Leu Ser Pro Thr Glu Leu Pro Phe Asp Cys			
		340		350
Leu Glu Lys Thr Ser Arg	Met Leu Ser Ser Thr Tyr Asn Ser Glu Lys			
		355		365
Ala Val Val Lys Thr Trp	Arg His Leu Ala Glu Ser Phe Gly Leu Lys			
		370		380
Arg Asp Glu Ile Gly Gly	Met Thr Asp Gly Met Gln Leu Phe Asp Arg			
385		390		400
Ile Ser Thr Ala Gly Tyr	Ser Ile Pro Glu Leu Leu Thr Lys Leu Val			
		405		415
Gln Ile Glu Arg Leu Asp	Ala Val Glu Ser Leu Cys Ala Asp Ile Leu			
		420		430
Glu Trp Ala Gly Val Val	Pro Pro Ala Ser Gln Pro His Ala Ala Ser			
		435		445
		440		

<210> 20  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
 Oligonucleotide primers used to amplify exon 5 of  
 EDA1-II.

<400> 20  
 agaaagcagg acctcctgg

19

<210> 21  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
 Oligonucleotide primers used to amplify exon 5 of  
 EDA1-II.

<400> 21  
 ctctcaggat caccactc

19

<210> 22  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnose ED.

<400> 22  
tatgttggct atgactgact gagtgg

26

<210> 23  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnose ED.

<400> 23  
ccctaccaag aaggtagttc

20

<210> 24  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnose ED.

<400> 24  
ctctcaggat caccactcc tg

22

<210> 25  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnose ED.

<400> 25  
tgtcaattca ccacagggag

20

<210> 26  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnos ED.

<400> 26  
gaatctagga tgcaggggc

19


<210> 27  
<211> 16  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnose ED.

<400> 27  
tattgcggcg aacacg

16

<210> 28  
<211> 16  
<212> DNA  
<213> Artificial Sequence

 <220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnose ED.

<400> 28  
tattgcagcg aacacg

16

<210> 29  
<211> 17  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnose ED.

<400> 29  
tattgcggca aaacacg

17

<210> 30  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers used to screen a BAC  
library.

<400> 30  
atcatggctg tgcactctag

20

<210> 31  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to screen a BAC  
library.

<400> 31  
acctactgca tgtctgtgga

20

<210> 32  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to screen a BAC  
library.

<400> 32  
cacatgctca gtgttgtcca

20

<210> 33  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to screen a BAC  
library.

<400> 33  
acacaggctc agtcatgcgg

20

<210> 34  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>



<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 34  
gcggtgaccc gggagatctg aattc 25

<210> 35  
<211> 11  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 35  
gaattcagat c 11

<210> 36  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 36  
ctgagcggaa ttcgtgagac c 21

<210> 37  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 37  
ggtctcacga attccgctca gtt 23

<210> 38  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 38  
agtgagaatg atgcctcc

18

<210> 39  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 39  
gcctttgttc agtcatagg

19

<210> 40  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 40  
cctgagagct ctttgtgag

19

<210> 41  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 41  
cgggatcctc gagggggggg ggggggggh

29

<210> 42  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 42  
aagcagagct ccacaatc

18

<210> 43  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<220>  
<221> misc\_feature  
<222> (38)..(39)  
<223> n represents a, c, t, or g; v represents a, g, or  
c

<400> 43  
ggccgctctg gacaggatat gttttttttt tttttttvn

39

<210> 44  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 44  
ggaacagtca agagcgagtt

20

<210> 45  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers used to clone a murine dl  
gene.

<400> 45  
gcggatccag gccgctctgg acaggatatg

30

<210> 46  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 46  
tggtgtctct gatgtgc

17

<210> 47  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 47  
acagtggccc ggaagaag

18

25  
Ant  
<210> 48  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 48  
ctgcggtgag aacgagtac

19

<210> 49  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 49  
ggcaaggtgg cgccatgt

18

<210> 50  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 50  
ggcaccaaag acgaggacta

20

<210> 51  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 51  
tcagcgatcat tctccatgtc

20

<210> 52  
<211> 46  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 52  
ctagactcga gaattcgcg cgcactagt tttttttttt tttttt

46

<210> 53  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 53  
tctggtagcc tcctttggaa

20

<210> 54  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 54  
ctagactcga gaattcg

17

<210> 55  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 55  
tagtcctcgt ctttggtgcc

20

<210> 56  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 56  
gagaattcgc ggccgcac

18

<210> 57  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 57  
agccccgtag tctggttgta

20

<210> 58  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 58  
gcgtcgacag tgatgagga

19

<210> 59  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 59  
cagtcttttg gcaccactca

20

<210> 60  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 60  
acgtgtgtgg agtcgtgga

19

<210> 61  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 61  
ctcgttgga ccttggtt

19

<210> 62  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 62  
tacatgctgg agaacagacc

20

<210> 63  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 63  
ttccaaagga ggctaccaga

20

AS  
Conf  
  
<210> 64  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 64  
ttggcagaag ctctgaagt

20

<210> 65  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 65  
tgctcgagat gtgatgaagg

20



<210> 66  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 66  
aagcagatgg ccacagaact

20

<210> 67  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 67  
ggagaggatg gcccatgtg

19

<210> 68  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 68  
cagaccatgc catagatggtt c

21

<210> 69  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 69  
acttcaggag cttctgccaa

20

<210> 70  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 70  
tcgtccttgc tcacttggg

19

<210> 71  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 71  
ggatgaattt gagaagctga c

21

<210> 72  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 72  
ctgacttggt cgtggtggc

19

<210> 73  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that were used to clone  
human DL.

<400> 73  
tccacgactc cacacacgt

19

<210> 74  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 74  
aaataaaggt agccagaccc

20

<210> 75  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 75  
gtaaggggct cagaccact

19

<210> 76  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 76  
catgtgtttc taaggaggta c

21

<210> 77  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 77  
caacaatgcc acaagcagga

20

<210> 78  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 78  
gtccgtatgg tttggctgc

19

<210> 79  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 79  
gccagggttt gccaggag

18

<210> 80  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 80  
gtccagctca cctgtctct

19

<210> 81  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 81  
accggctctt tcctacacc

19

<210> 82  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 82  
tggagcttct ctggatcatt t

21

<210> 83  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 83  
aactccaggt gatcgatacc

20

25  
Cmt  
<210> 84  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 84  
ctgggtcatt catgccttct

20

<210> 85  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 85  
atggtgtgtg gaagccctg

19

<210> 86  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 86  
catgagccaa ttctaactcc t

21

<210> 87  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 87  
caggacccca gttcagctt

19

<210> 88  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 88  
cccaggcact gctaatgac

19

<210> 89  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 89  
ccacatctca cagctcatca

20

<210> 90  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 90  
tttctactgt tgcccctttc t

21

<210> 91  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 91  
cccagccctt catgtcagt

19

<210> 92  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 92  
tctattgact gtgacttgca

20

<210> 93  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used for  
mutation screening of human DL.

<400> 93  
ctcgttgat ccttggtt

19

<210> 94  
 <211> 425  
 <212> DNA  
 <213> Homo sapiens

<400> 94  
 tttttttttt tgggggacaga cggccgaaga gccaggtgtg ccaaggtcat atggcagcag 60  
 ggctgaacgt gcccgtcca gctctccag tgctggaaga gacctctaga tggagcaggt 120  
 gagtttgcaa ttagggaaag cccctcggca aggactgagt ttccaaactt gcagacaggg 180  
 cagggagcgg tcaaggaaga gttcccggga agccctttaa acggaaagga agcggggcta 240  
 gtgtcagaga ggtgtgacag gtcccagtc gccctgctgg cccctaagga catagagtac 300  
 ctgcttctga gagggtgcc acgggtggcca cctgtgaagc ctgtcaccca gaactggatg 360  
 gtacctgact ttcttcatag acccatcttc tgctgggact gaagctgacc tccaacagaa 420  
 gccag 425

<210> 95  
 <211> 434  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)..(434)  
 <223> n represents a, c, t, or g

<400> 95  
 gtaagccctg gtcctttcct ctgggtttct aaactcttca gctgtggccg agacggaggt 60  
 gtcattgggt gggagagagg ctgggtgcat ttttgaaatg catgtcattt ttgggttgcg 120  
 tttgaagggt tcnccaaacc ctctgagcac gagaaacaca atcactancc tcgggtttta 180  
 ccttggggcc tccgtgtgct cctagcctcc tntcaggctc cctcccaggc atgggtgcna 240  
 ggctgggaag gccccagagt cagcccaagt ggcattgggt cagcttcagc ttcattgtctg 300  
 cttttctttt aggatgtata gtttcccctc tggttgctgg aaggcacctt atatccagtg 360  
 ggggttaaata aaggtagcca gacccccggc tgggtgtgcta ccgccagtgc ccagctaata 420  
 acgcatnnnt tcag 434

<210> 96  
 <211> 70  
 <212> DNA  
 <213> Homo sapiens

<400> 96  
 gtgagcccct tgggagagga tggcccatgt gggggactgc acgcagacgc cctggctccc 60  
 cgtcctgggtg 70

<210> 97  
 <211> 722  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)..(722)  
 <223> n is a, c, t or g



<400> 97

gtaagtggtc tgagcccctt acccccacag caccctcatc ctcatgatgg ttggactgtt 60  
tcttggcctc ttcagctgta aaatgggaat gctgatcata gtccctcctc cacaggggtc 120  
ttctgagggg gaaatgaaac caggcctgca aagcacagaa ctctgccccca ggctgaagtt 180  
acattgattt cggttggtagc tcccttcata gggctctcatg gatataaacg ttcttgattg 240  
cttgtttgtg gtgtgatata cacagccctg tgtctatgtg atgagctcat gcttgggggc 300  
cgccgagcta agaaagactt ggaagactca gaccctacc cccatcctcc tggacacgcc 360  
gggtgttctga ggagccactg tattagaggc tcagtggggg acagggggcg ctcctccatg 420  
accttggaac gtgcgttgat gaggagaact canagcaggc cttgatgggt ggatggggct 480  
tggccagcag ggggtgaaggc aggggtggtt tagtgggggc tggccgtgcc cangtggatc 540  
aaccaggagc cactggagac ttaacagcag tgagcactna caagcggcac cttcccagac 600  
cgagccccca gcagagcccc caccgcaggg caccctctc ctatgtcaac cttgggggtc 660  
tgcaggagtc acatgtgttt ctaaggaggg acggaggcca caacaccccc ctttgttggc 720  
ag 722

<210> 98

<211> 123

<212> DNA

<213> Homo sapiens

<400> 98

gtgtctctga tgtgctcagc ccgagcggaa tactcaaact gcggtgagaa cgagtactac 60  
aaccagacta cggggctgtg ccaggagtgc cccccgtgtg ggccgggaga ggagccctac 120  
ctg 123

<210> 99

<211> 740

<212> DNA

<213> Homo sapiens

<400> 99

gtaaggaccc agccctcctg gagcctgggtg cgctctcagg ggaggcctcc tgcttgtggc 60  
attgttgccc tgagcctgcc ttgctgtgtg aggggatgcc agggatatc aaaccagccg 120  
gtcacgctcc ctggacgttg agattgatgg caagagctgc cgtgagccca ggaatggcac 180  
tcaccagcta agcattcata aacagatttt tcaggagtgc tgaaatgttt ttaaaggatc 240  
actttcccac tctaccctga ttaaattgagc gtcagatcat ctgattggaa gcaggattga 300  
aatattctcc agtactagta ctttttttcc tgagtgtgtc atctccctcc gcctctgggc 360  
aagctaagcc tgagtgttct gttcagcact aagggaaacc tccgggggtt cagtgtccgg 420  
ttctttagc aagctgagga aagtcagatg ccaagtgcta cctgcactgc ctgggcattc 480  
cagcagctcg ctgaattcat ctgggggagg ctcaaaaaa gggcagcatc tggagcctga 540  
gagtggcgag gagaggggca agcccagagc atgagctggt tcctgggggg ttttgcagtt 600  
aggacaactc aggaaaccaa ggcccggcaa gtagtcttc tggagacagc tggcacgtca 660  
ctgccccagg actgtgggccc gagtccgtat ggtttggctg ctgcactcac ctgtgtcccc 720  
tgtcctcttt ccttgagacag 740

<210> 100

<211> 182

<212> DNA

<213> Homo sapiens

<400> 100

tcctgtggct acggcaccaa agacgaggac tacggctgcg tcccctgccc ggcggagaag 60

ttttccaaag gaggctacca gatatgcagg cgtcacaaag actgtgaggg cttcttccgg 120  
gccaccgtgc tgacaccagg ggacatggag aatgacgctg agtgtggccc ttgcctccct 180  
gg 182

<210> 101  
<211> 1169  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)..(1169)  
<223> n represents a, c, t, or g

<400> 101  
gtaagcacag gccctcctgg caaacccctgg catgctttct gcagaaaacc ccgaggggct 60  
acgggcaagg accttgggaa caggggtcat ggatactgca ggccctcgggtg cagccgcaca 120  
cctggccttg gtcccatccc acaaggagca gcatccagga cggagagtcc tggccccctcc 180  
ggtggacagg cagcccatca ggctctgcct ctgtgtctcc taagtggcca ttaaccatca 240  
taatatcttc tgaccaccaa aaggaaacaa attgcttgaa tacttacagt gcagtagccc 300  
atgtgaaaca ctttgggaaa aagaaaactn naatttnatg caaaaagcag tatttttnagt 360  
attctggnaa cactctggnn aanctactaa taanntanat ntgagaaaag aaatatnant 420  
gangagatta tgannncgaa gnnaagnnan gnanaancan annaggntnn agaaaatgag 480  
gttgnaang antnataana tagnacanng ntgatatnca tnggaaagta aacngcntga 540  
gnannagtga tttgtgatng ccagggtatt cntngaggga aaacangact attggancag 600  
anngtgngga aaggnacaaa cgntgtntna ncataganaa nntagagttg ntgggtgggc 660  
attnnaanna gcnggtaaag aatagcttgn aagtngncaa ggggtncagg aggcaannnt 720  
aatgcctata natcccataa gnntgcaggc tantggngan ggtgctnaca aagagcatgt 780  
tcctcctcca ggaaggtctg gccttngttg gtgtgnacccc tgggggggcta ancaggccnt 840  
acatgtgggg gcacagggat atttctggtg natgatgtga tggcacacac actaaacaca 900  
gccaccagag agaggaacca gaaaggggct gagatcaaaa gaaaggccca cgttggcagc 960  
tcaatattgt taaaagaatg ctccatttca agacaggctg aaacccaag gaaactgagt 1020  
ggacagagca ggtgactgag tgggcgtggc ctcatgcccc acttgattgt gggcctgcag 1080  
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ctgttttgc cttgtgctct ccnccgtag 1169

<210> 102  
<211> 86  
<212> DNA  
<213> Homo sapiens

<400> 102  
ctactacatg ctggagaaca gaccgaggaa catctatggc atgggtctgct actcctgcct 60  
cctggcacc cccaacacca aggaat 86

<210> 103  
<211> 484  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)..(484)

<223> n represents a, c, t, or g

<400> 103

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cagaggggtgt aggaaagagc cggtcctggc acctggacaa ggtgaatcac agtaacagca 120
ctagtgaag tgctcctgtg gcctgtccag gcaggtctat gaagggaggg gcgtttgcca 180
catctgagcc ttgagtcaga ggctgaggtt ctagtgcagg ttggccacca gctacctgac 240
aagtcactta acctccatga gcctcgggtt tctcatcggg aatatggggg tgaagaaagn 300
acaatanca tgactcttta gggttcatta aacagtctaa gaaatacaaa tatttagctc 360
ccctcagcca tcactgcctc aggccattc atgatcatga atccagatcc atgagctctg 420
tggcagcgtg ctttgaaggt ggagcttctc tggatcattt gagggactct atttgcctt 480
gcag
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484

<210> 104

<211> 87

<212> DNA

<213> Homo sapiens

<400> 104

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gtgtgggagc cacttcagga gcttctgcca acttccctgg cacctcgggc agcagcaccc 60
tgtctccctt ccagcacgcc cacaaag
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87

<210> 105

<211> 799

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (1)..(799)

<223> n represents a, c, t, or g

<400> 105

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gaagaggaga ggaaatgatc atgagtgatg attatggtgc gcttccccac ctggcctcac 120
ctccctaatt taattgaatg acatgttgcc ccccgtagcag gaagtcatta tatctgcaat 180
cagagttgat ccctctatgg gtgtcctggg accgctggga ggtgctggtg gtgaaggcgg 240
gggcatagcg gcaggtggac agcacaggca gctgcaagcc cggccaggag gagagaccag 300
gcgtcctggg ctttggtttg gccgngagtt aacagcaatt ctatcactgg tttcatata 360
aacatgctga ccatagcact ttaatattaa cttgcanaan gtncattttc attctncctt 420
aaccaggga gangggatcg nggaggaccc caangtttan tntgcctctc acanttagnc 480
ccccacntgg cttgncntna aggttgccaa agcagtagna gcgagaagca agctccctta 540
ggaacaatna ggtancccca gaaaaagtct gganaggcca agtctgaggg cagcgagcag 600
gggttggtgg cagtcctggg ctggcagcca aaaccagcgc gnaggatttg gttctcagtc 660
taagcaagca cctcagattt caggggtccc tgaaagcatc ccaggggcag ggccattgct 720
tccaggggcc ggagtcctgg agggaagacc agcaggatc ctgagctctg ggtcattcat 780
gccttctctc caccacag
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799

<210> 106

<211> 126

<212> DNA

<213> Homo sapiens

<400> 106  
aactctcagg ccaaggacac ctggccactg ccctgatcat tgcaatgtcc accatcttca 60  
tcatggccat cgccatcgtc ctcatcatca tgttctacat cctgaagaca aagccctctg 120  
ccccag 126

<210> 107  
<211> 96  
<212> DNA  
<213> Homo sapiens

<400> 107  
gtgacggccc ccatgcgcgc gtgccctgcc tcctggactc tccgtcaact cccctgtctg 60  
gagagcctgg ctgctcactc cctcctctct cccag 96

<210> 108  
<211> 75  
<212> DNA  
<213> Homo sapiens

<400> 108  
cctgttgac cagccacccg gggaagagcg tggaggccca agtgagcaag gacgaggaga 60  
agaaagaggc cccag 75

<210> 109  
<211> 243  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)..(243)  
<223> n represents a, c, t, or g

<400> 109  
gtctgtgaac cagggcttcc acacaccatg tgcacggtgc ccattctctg gtggaggggcg 60  
ttcccagaag cagcctcctc gctgcttctg ctctcacatg ctgaaccata ctgtgcttac 120  
cgtgggggtg tgccacacag acaccgggca gctctgcccc acaggaagag caggggttggg 180  
ctgagcgcan agccatgagc caattctaac tcctatctcc ccaacctccc catttccctg 240  
cag 243

<210> 110  
<211> 73  
<212> DNA  
<213> Homo sapiens

<400> 110  
acaacgtggt gatgttctcc gagaaggatg aatttgagaa gctgacagca acttcagcaa 60  
agcccaccaa gag 73

<210> 111  
<211> 1174

<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)..(1174)  
<223> n represents a, c, t, or g

<400> 111  
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gttnccaggg tgcagccgag tgaactgaca ggctagcctg ggacactatg gggacgttcg 120  
gcgacagaca gtccccacca cctctttgct gactggcagg ggtcagggtg tgtgaggagc 180  
ctgtggaaac agctgcctgc tgctctcggg tcaggcccct gtccctgcat cctgccaaat 240  
tccctggggc ttcctcctta acatccgaat tcctcatgcc ccttctccag actgggaggg 300  
cagaacataa agccaaggat gcatgcctgt tgcggccaac acaccagtac caccctgcc 360  
ggtgccagta ctgctgccac cgtaatgctg gtaacaaccg tggatgatgac ggctaacagc 420  
atttggtgcc tactgcccac caagtgctgg gctagggctg tgaacacatc ctnccctcca 480  
ccagcccang agcaagggtc ttggaatcat ccctggttat aggaatacca cactgaggtg 540  
tggaagttgt cactcgccca aagtcacaca ctagtgaaca canggcttgg ggtccgaagt 600  
ccangctccc aangagccac atggngntaa anaggtagn cagggtcacc cccctaagtt 660  
ccaagagggg ggctttttna ggcacaaagg gttccattna gggtcccttt tcaatgnctt 720  
ccagagagcc agcatggatt tcagcgccag cngcatccaa tctgtttgct ttaacatgaa 780  
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ttgtttgttt ggaaagaagc aggaagccac cgggtgtatg ctctgtctcat gtcccctggg 1020  
cccgtgcccc caagggtgcc agtaaacacc tgaaaaacaa gtcattgccc cccactgtcc 1080  
acagctgggc aatggacaag ttcaccacag gagaacttgt cagggtgca gccccccag 1140  
gcactgctaa tgaccatcgc tcttgttttt gcag 1174

<210> 112  
<211> 160  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)..(160)  
<223> n represents a, c, t, or g

<400> 112  
cgagaacgat gcctcatcng agaattgagca gctgctgagc cggagcgtcg acagtgatga 60  
ggagcccgcc cctgacaagc agggctcccc ggagctgtgc ctgctgtcgc tgggtcacct 120  
ggccagggag aagtctgcca ccagcaacaa gtcagccggg 160

<210> 113  
<211> 226  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)..(226)  
<223> n represents a, c, t, or g

<400> 113  
 gtgaggctcc tgcaggtgcc atgatgagct gtgagatgtg gctccctcac agccgcaagg 60  
 actaaaactt tcttattgaa tcagctctcc tgcaagacgg ggtgtttctc ccagaagtcc 120  
 aagataggag acctggacag tgacaagttc acagcaagat agtcaaaagg gaaaaaacc 180  
 ctttcgtttt tgagttttgt ttttttttn ggngatgana gnctng 226

<210> 114  
 <211> 61  
 <212> DNA  
 <213> Homo sapiens

<400> 114  
 attcaaagcc ggaggaaaaa gatcctcgat gtgtatgcc a cgtgtgtgg agtcgtggaa 60  
 g 61

<210> 115  
 <211> 309  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)..(309)  
 <223> n represents a, c, t, or g

<400> 115  
 agagtggngg aagagngaag ggaggngaaa agggggngag ngagggaagg aggnngggaan 60  
 nnggagttag ggggggaagg ggnagagngg gnggnagn gnngngagng gganagngaa 120  
 agnagtgaga ngggaaggna nagnagagnag gggnnangag aaagngggag ngtaggnggc 180  
 gatgngnnng gtngaaatat tnanagaaat tttttcaa attttttatt tcatTTaaat 240  
 aatttttcag tgttgacctt ctattgactg tgacttgcaa catctaactg tggccattgg 300  
 tgtctgtag 309

<210> 116  
 <211> 2781  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)..(2781)  
 <223> n represents a, c, t, or g

<400> 116  
 gtcttagccc cacggagctg ccatttgatt gcctcgagaa gactagccga atgctcagct 60  
 ccacgtacaa ctctgagaag gctgttgatg aaacgtggcg ccacctcgcc gagagcttcg 120  
 gcctgaagag ggatgagatt gggggcatga cagacggcat gcaactcttt gaccgcatca 180  
 gcacggcagc ctacagcatc cctgagctac tcacaaaact ggtgcagatt gagcggctgg 240  
 atgctgtgga gtccttggtg gcagacatac tggagtgggc ggggggtgtg ccacctgcct 300  
 cccagccaca tgctgcatcc tgaaaagcat gcctgtgggc tgtcctccca ggacaagcca 360  
 aggatccaac gagggctctg gagctgtgag tggtgccaaa agactgccaa gaatcaaggc 420  
 ttttgtgata tgtcaccgta tgccttagga tgttcaagga gccagacgaa ataaggcctg 480

tcttccaatt	taaccaaaga	taaaggacta	gagccgggat	actttcanat	gctcgctgt	540
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aactcactga	acaatgagac	aatgtngagg	actcaaata	atcaaacc	gtgggaatga	660
cagantgaag	aatctggtcc	ctgtcttta	ggagtttgca	ctccagtaga	agacagaagg	720
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cctctctctg	cctcagtttc	tcgtctgcca	atgagatgtt	agttagtgat	tctataattg	1560
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agagctcagg	agccaggcta	gtgatcacac	caggggttag	agttcactgc	tgaactccct	1860
gatggcagggt	ctgtgtttat	tactacatta	aaacaaagtc	tctgacttat	aaagcgaggt	1920
cgtaaaaaatt	acaagttgca	tgactgaaaa	aatgcttttag	ggggaaaatc	agtcatatct	1980
ttaacacca	caagcaattt	cccaccaacg	aatgtagtac	atactgtgag	aggatcataa	2040
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ctattttggtt	taccttgcaa	gctaaatact	ccacggcaga	ncttaattat	ccttttaatt	2160
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cccttgatcat	ttacttattt	ggaaacatgg	gatttactct	gacaagcttt	agcctatgtt	2520
atgggattca	gaacaatgag	atcataataa	ttctcactga	ccaaagctgg	gactccatcc	2580
tgccattttt	gtgtggagat	attcataatt	ctgcaatact	ttaaaacatt	tagaaaacac	2640
cccagggtag	gtctgtggcc	cttanacagt	gaaagtctta	attggcaata	ttatttttgc	2700
taattctgga	tatatataac	nnattatatt	tataaatctc	aataaacccc	atttantaaa	2760
aaaaaaaaa	aaaaaaaaa	a				2781

<210> 117

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:

Oligonucleotide primers that can be used to  
diagnosis ED.

<400> 117

aaaaagtaac actgaccta ttt

23

<210> 118

<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primers that can be used to  
diagnosis ED.

<400> 118  
agaaagcagg acctcctgg

19

<210> 119  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primer that can be used to amplify  
TNF homology domain of mouse dl.

<400> 119  
ggattccagg aacaactggt atgg

24

<210> 120  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primer that can be used to amplify  
TNF homology domain of mouse dl.

<400> 120  
cctacacaca gcaagcacct tagag

25

<210> 121  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primer that can be used to amplify  
TNF homology domain of mouse dl.

<400> 121  
gtcgacgaaa atcagccagc tg

22

<210> 122



<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
Oligonucleotide primer that can be used to amplify  
TNF homology domain of mouse dl.

<400> 122  
aagcttctag gatgcagggg c

21

<210> 123  
<211> 17  
<212> PRT  
<213> Homo sapiens

<400> 123  
Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu  
1 5 10 15

Phe

<210> 124  
<211> 17  
<212> PRT  
<213> Homo sapiens

<400> 124  
Leu Leu Val Pro Thr Ser Gly Ile Tyr Phe Val Tyr Ser Gln Val Val  
1 5 10 15

Phe

<210> 125  
<211> 17  
<212> PRT  
<213> Homo sapiens

<400> 125  
Leu Ala Leu Pro Gln Asp Gly Leu Tyr Tyr Leu Tyr Cys Leu Val Gly  
1 5 10 15

Tyr

<210> 126  
<211> 17  
<212> PRT  
<213> Homo sapiens

<400> 126

Leu Val Ile Asn Glu Ala Gly Leu Tyr Phe Val Tyr Ser Lys Val Tyr  
1 5 10 15

Phe

<210> 127

<211> 17

<212> PRT

<213> Homo sapiens

<400> 127

Leu Thr Val Lys Arg Gln Gly Leu Tyr Tyr Ile Tyr Ala Gln Val Thr  
1 5 10 15

Phe